

WHAT IS CLAIMED IS:

1. An exposure method of transferring a master pattern onto a substrate while moving a controlled element concerning exposure operation on the basis of a target locus, comprising:

the correction step of correcting the target locus on the basis of correction information prepared in correspondence with the master; and

- the transfer step of transferring the master pattern onto the substrate while moving the controlled element toward the corrected target locus.

2. The method according to claim 1, wherein the correction information includes information corresponding to a shape characteristic of the master pattern.

3. The method according to claim 1, wherein the correction information includes information corresponding to a distortion of the master pattern.

4. The method according to claim 1, wherein the correction information includes information corresponding to a shape characteristic of a pattern already formed on the substrate.

5. The method according to claim 1, wherein the correction information includes information corresponding to a distortion of a pattern already formed on the substrate.

6. The method according to claim 1, wherein the

correction information includes information corresponding to both a shape characteristic of the master pattern and a shape characteristic of a pattern already formed on the substrate.

5 7. The method according to claim 1, wherein the correction information includes information corresponding to both a distortion of the master pattern and a distortion of a pattern already formed on the substrate.

10 8. The method according to claim 1, wherein the controlled element includes a stage which moves with holding the substrate or the master in exposure operation, and in the transfer step, the master pattern is transferred onto the substrate by a scanning exposure method while the stage is moved.

9. The method according to claim 8, wherein the correction information includes information corresponding to a moving direction of the stage.

10. The method according to claim 8, wherein the correction information includes information corresponding to a moving speed of the stage.

11. The method according to claim 1, wherein the correction information includes a set of discrete correction values.

12. The method according to claim 1, wherein in the correction step, the target locus is corrected on the basis of pairs of pieces of correction information.

13. The method according to claim 12, wherein the correction step includes the steps of:

synthesizing pairs of pieces of correction information to generate a pair of pieces of correction information; and

correcting the target locus on the basis of the synthesized correction information.

14. An exposure method of transferring a master pattern onto a substrate while moving a controlled element concerning exposure operation, comprising:

transferring the master pattern onto the substrate while moving the controlled element in accordance with a target locus generated in correspondence with a shape characteristic of the master pattern.

15. An exposure method of transferring a master pattern onto a substrate while moving a controlled element concerning exposure operation, comprising:

transferring the master pattern onto the substrate while moving the controlled element in accordance with a target locus generated in correspondence with a shape characteristic of a pattern already formed on the substrate.

16. An exposure method of transferring a master pattern onto a substrate while moving a controlled element concerning exposure operation, comprising:

transferring the master pattern onto the

substrate while moving the controlled element in
accordance with a target locus generated in
correspondence with a shape characteristic of the mask
pattern and a shape characteristic of a pattern already
5 formed on the substrate.

17. An exposure apparatus for transferring a master
pattern onto a substrate while moving a controlled
element concerning exposure operation on the basis of a
target locus, comprising:

10 a correction unit for correcting the target locus
on the basis of correction information prepared in
correspondence with the master; and

a transfer unit for transferring the master
pattern onto the substrate while moving the controlled
15 element toward the target locus corrected by said
correction unit.

18. The apparatus according to claim 17, wherein the
correction information includes information
corresponding to a shape characteristic of the master
20 pattern.

19. The apparatus according to claim 17, wherein the
correction information includes information
corresponding to a distortion of the master pattern.

20. The apparatus according to claim 17, wherein the
25 correction information includes information
corresponding to a shape characteristic of a pattern
already formed on the substrate.

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21. The apparatus according to claim 17, wherein the correction information includes information corresponding to a distortion of a pattern already formed on the substrate.
- 5 22. The apparatus according to claim 17, wherein the correction information includes information corresponding to both a shape characteristic of the master pattern and a shape characteristic of a pattern already formed on the substrate.
- 10 23. The apparatus according to claim 17, wherein the correction information includes information corresponding to both a distortion of the master pattern and a distortion of a pattern already formed on the substrate.
- 15 24. The apparatus according to claim 17, wherein the controlled element includes a stage which moves with holding the substrate or the master in exposure operation, and said transfer unit transfers the master pattern onto the substrate by a scanning exposure
- 20 method while the stage is moved.
25. The apparatus according to claim 24, wherein the correction information includes information corresponding to a moving direction of the stage.
26. The apparatus according to claim 24, wherein the
- 25 correction information includes information corresponding to a moving speed of the stage.
27. The apparatus according to claim 17, wherein the

correction information includes a set of discrete correction values.

28. The apparatus according to claim 17, wherein said correction unit corrects the target locus on the basis
5 of pairs of pieces of correction information.

29. The apparatus according to claim 28, wherein said correction unit includes:

a unit for synthesizing pairs of pieces of correction information to generate a pair of pieces of
10 correction information; and

a unit for correcting the target locus on the basis of the synthesized correction information.

30. A device manufacturing method comprising:

the coating step of coating a substrate with a
15 resist;

the exposure step of transferring a master pattern onto the substrate coated with the resist by the exposure method defined in claim 1; and

the developing step of developing the substrate
20 bearing the pattern.

31. A device manufacturing method comprising:

the first coating step of coating a substrate with a first resist;

the first exposure step of transferring a first
25 master pattern onto the substrate coated with the first resist;

the first developing step of developing the

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substrate bearing the first master pattern;

the second coating step of coating the developed substrate with a second resist;

the second exposure step of transferring a second master pattern onto the substrate coated with the second resist; and

the second developing step of developing the substrate bearing the second master pattern,

wherein the second exposure step includes the correction step of correcting a target locus of a controlled element concerning exposure operation on the basis of correction information corresponding to a shape characteristic of the second master pattern and/or a shape characteristic of a pattern formed on the substrate after the first developing step, and

the transfer step of transferring the second master pattern onto the substrate while moving the controlled element toward the corrected target locus.

32. The method according to claim 31, wherein different types of exposure apparatuses are used in the first and second exposure steps.